

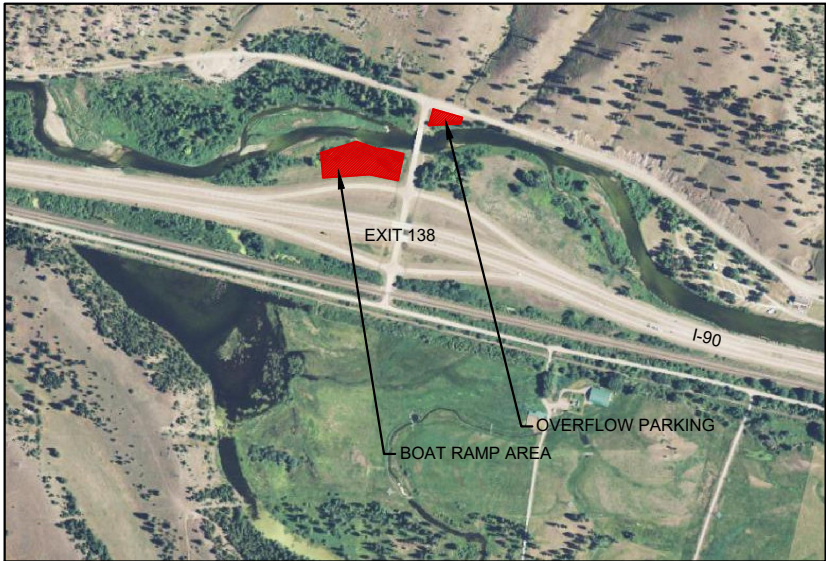
PLANS FOR CONSTRUCTION OF:

BEARMOUTH FISHING ACCESS SITE

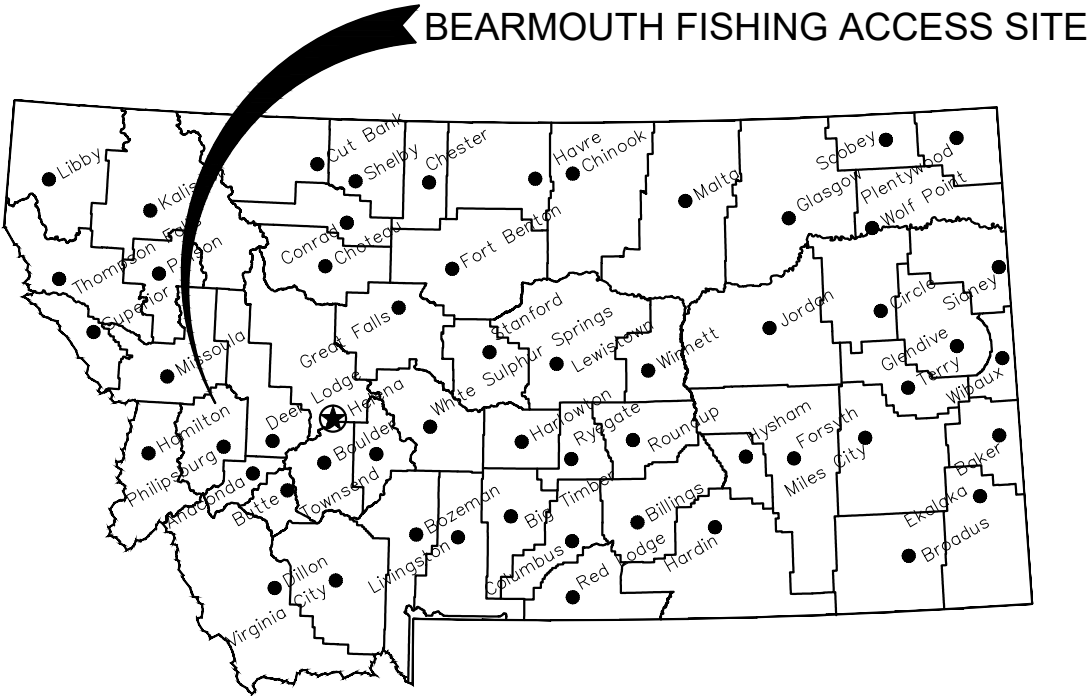
NEAR DRUMMOND, MONTANA
FWP #7163607

SHEET INDEX

TITLE SHEET	T1
NOTES AND DETAILS	C1
BOAT RAMP AREA SITE PLAN	C2
OVERFLOW PARKING SITE PLAN	C3
ROAD PLAN AND PROFILES	C4
LATRINE DETAIL	C5
CAST-IN-PLACE BOAT RAMP	C6
PUSH-IN BOAT RAMP DETAILS	C7
BARRIER DETAILS	C8
CATTLE GUARD DETAILS	C9
EROSION CONTROL DETAILS	C10



PROJECT VICINITY MAP



PROJECT LOCATION MAP

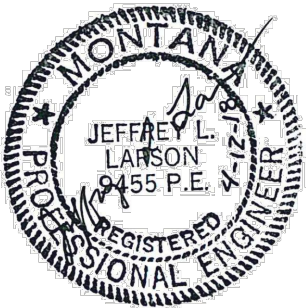
LEGEND

EXISTING FEATURES

- ASPHALT
- DECIDUOUS TREE
- BRUSH
- SIGN
- LANDSCAPING ROCK
- WIRE FENCE
- CATTLE GUARD
- FIBER OPTIC CABLE
- GUARD RAIL
- PROPERTY LINE

PROPOSED FEATURES

- ASPHALT SURFACING
- GRAVEL SURFACING
- CONCRETE BOAT RAMP OR SIDEWALK
- WETLANDS (DO NOT DISTURB)
- WETLANDS (DISTURBED BY CONSTRUCTION)
- SIGN
- WIRE FENCE
- LATRINE
- SPOT ELEVATION



J. LARSON
DRAWN BY: DATE:
J. LARSON
CHECKED BY: DATE:

REVISED BY: DATE:
J. LARSON
APPROVED BY: DATE:

APPROVED BY: DATE:
APPROVED BY: DATE:



Montana Fish
Wildlife & Parks

TITLE SHEET
BEARMOUTH FISHING ACCESS SITE
FWP #7163607



28 ANTLER AVENUE
CLANCY, MT 59634
406-443-6111
jeff@larsonce.com

SHEET: T1

CONSTRUCTION NOTES:

1.

ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH "MONTANA PUBLIC WORKS SPECIFICATIONS", SIXTH EDITION (MPW).
2.

BEFORE DIGGING, CALL 811 FOR LOCATION OF EXISTING UTILITIES. THE LOCATION OF UTILITIES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND WERE DERIVED PRIMARILY FROM AS-BUILT DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF PRIVATE UTILITIES WITHIN THE PROJECT AREA, NOT LOCATED BY UTILITY COMPANIES.
3.

ALL DISTURBED AREAS AND AREAS DESIGNATED IN THE PLANS FOR SEEDING SHALL BE TOPSOILED, SEEDED, MULCHED, AND FERTILIZED (SEE MPW SEEDING SPECIFICATIONS). SALVAGED TOPSOIL SHALL BE SPREAD EVENLY OVER DISTURBED AREAS. SEED MIX SHALL BE NATIVE DRYLAND MIX AS FOLLOWS:

PLANT SPECIES	LBS/ACRE
WESTERN WHEATGRASS	4.8 LBS
STREAMBANK WHEATGRASS	3.2 LBS
HARD FESCUE	3.2 LBS
SLENDER WHEATGRASS	2.4 LBS
GREEN NEEDLEGRASS	2.4 LBS
TOTALS	16.0 LBS

4.

ALL EXCAVATION AND EMBANKMENT ON THIS PROJECT, SHALL MEET THE REQUIREMENTS OF MPW SPECIFICATION 02/230 STREET EXCAVATION, BACKFILL AND COMPACTION.
5.

CONCRETE SHALL BE M-4000 AS DEFINED BY MPW SPECIFICATION 03/310 STRUCTURAL CONCRETE. REINFORCING STEEL SHALL BE ASTM 615, GRADE 60.
6.

CONCRETE SLABS AND SUPPORT PADS SHALL BE CROSS SLOPED AT A MAXIMUM 1.8% OR AS INDICATED. CONCRETE SLABS SHALL BE BROOM FINISH.
7.

ALL TESTING OF CONCRETE REQUIRED BY MPW SHALL BE PROVIDED BY AN INDEPENDENT TESTING FIRM AT THE EXPENSE OF THE CONTRACTOR. A MINIMUM OF TWO SETS OF CONCRETE TESTS SHALL BE PROVIDED FOR THE BOAT RAMP, ONE FOR EACH RAMP TYPE.
8.

ALL REQUIRED COMPACTION TESTING SHALL BE PROVIDED BY AN INDEPENDENT TESTING FIRM AT THE EXPENSE OF THE CONTRACTOR, COMPACTION TESTING FREQUENCIES ARE AS FOLLOWS:

LOCATION/MATERIAL	# OF TESTS
APPROACH TO HIGHWAY – FILL	5
RAMP ROAD SUBGRADE	2
BOAT RAMP SUBGRADE	2
BOAT RAMP PARKING GRAVEL SURFACING	7
OVERFLOW PARKING SUBGRADE	2
OVERFLOW PARKING GRAVEL SURFACING	2

9.

CRUSHED TOP SURFACING FOR GRAVEL SURFACING SHALL MEET THE FOLLOWING SPECIFICATIONS INCLUDING BINDER OR BLENDING MATERIAL:

SIEVE SIZE	% PASSING
3/4" SIEVE	100%
No. 4 SIEVE	40-80%
No. 10 SIEVE	25-60%
No. 200 SIEVE	8-20%

IN ADDITION, THE PORTION PASSING THE NO. 200 SIEVE CANNOT EXCEED 2/3 OF THE PORTION PASSING THE #40 SIEVE; THE MAXIMUM LIQUID LIMIT FOR THE MATERIAL PASSING THE NO. 40 SIEVE SHALL NOT EXCEED 35, WHILE THE PLASTICITY INDEX CAN VARY BETWEEN 3 AND 10; THE WEAR FACTOR SHALL NOT EXCEED 50% AT 500 REVOLUTIONS; AND AT LEAST 20% OF THE AGGREGATE RETAINED ON

NO. 4 SIEVE SHALL HAVE A FRACTURED FACE.

10.

IMPORT MATERIAL REQUIRED TO COMPLETE EARTHWORK SHALL BE IMPORTED FROM OFF-SITE. IMPORT SHALL BE CLEAN MATERIAL, WITH OUT EXCESSIVE CLAY OR FINES, SUITABLE FOR STRUCTURAL FILL MATERIAL AND FREE OF DELETERIOUS MATERIALS.
11.

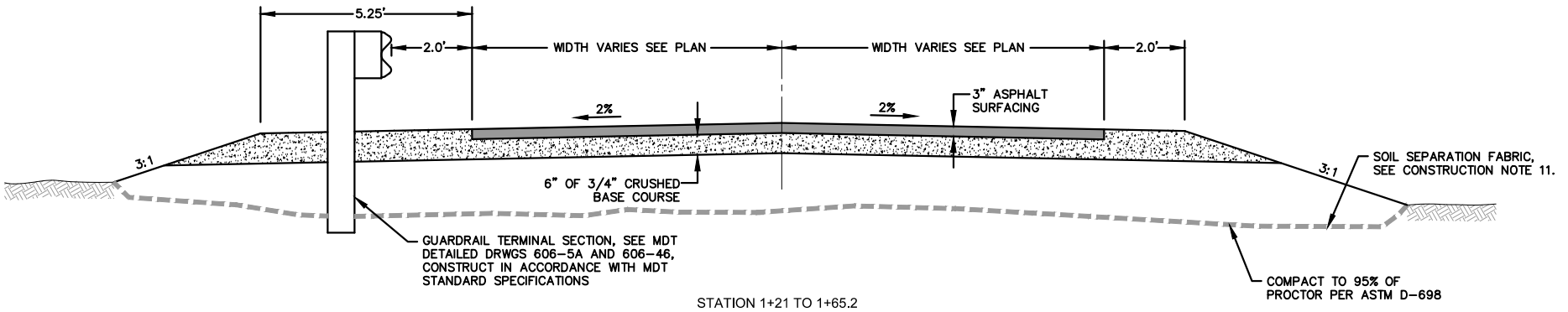
SOIL SEPARATION FABRIC SHALL BE INSTALLED OVER THE ENTIRE BOAT RAMP SITE WITHIN THE CONSTRUCTION LIMITS AFTER TOPSOIL IS REMOVED IN FILL AREAS. SOIL SEPARATION FABRIC WILL ALSO BE EXTENDED INTO CUTS, WHERE FABRIC SHALL BE PLACED ON TOP OF SUBGRADE UNDER THE GRAVEL SURFACING SECTION.
12.

TREES AND BRUSH IN CONFLICT WITH IMPROVEMENTS AND 5.0' BEYOND EDGE OF EARTHWORK SHALL BE COMPLETELY REMOVED INCLUDE ROOT SYSTEMS. MATERIAL CREATED BY TREE AND SHRUB REMOVAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN ENGINEER APPROVED LANDFILL.
13.

PROVIDE AND PLACE PLANT MIX SURFACING PER MDT STANDARDS AND SPECIFICATIONS.
14.

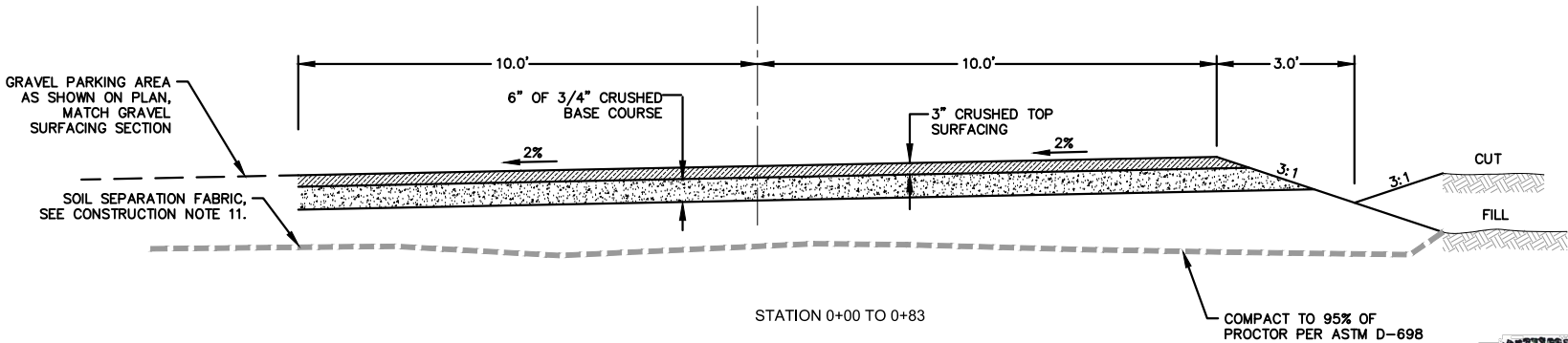
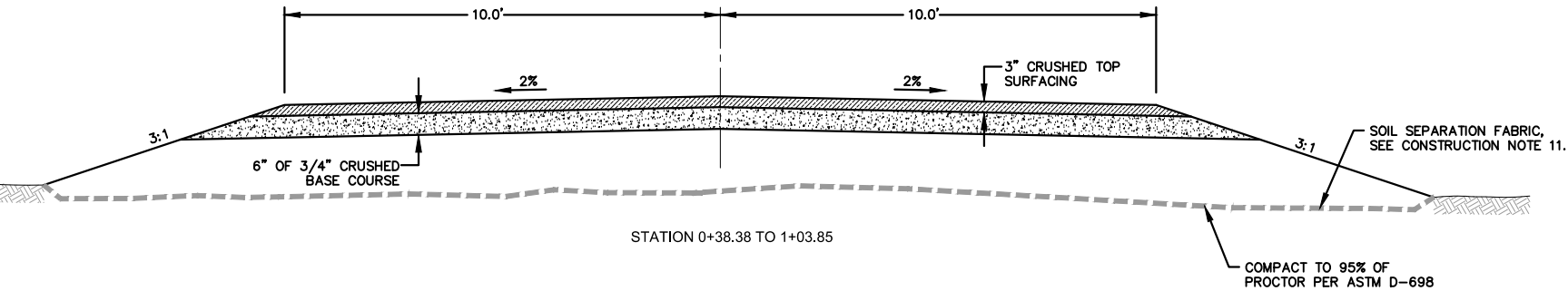
THE CONTRACTOR SHALL AVOID DISRUPTING AREAS OF DELINEATED WETLANDS, EXCEPT WHERE SPECIFICALLY SHOWN AS DISTURBED BY CONSTRUCTION. FENCING AND EROSION CONTROL WORK IS ALLOWED, BUT CARE SHALL BE TAKEN TO MINIMIZE IMPACTS.
15.

THE CONTRACTOR SHALL PREPARE, SUBMIT AND OBTAIN APPROVAL OF A TRAFFIC CONTROL PLAN FROM BOTH THE ENGINEER AND THE MDT MISSOULA DISTRICT OFFICE PRIOR TO ENTERING MDT RIGHT-OF-WAY FOR CONSTRUCTION.



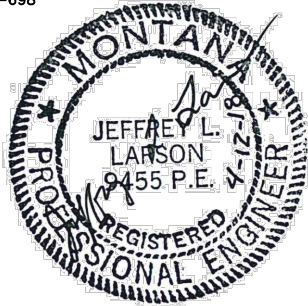
APPROACH ROAD TYPICAL SECTIONS

NO SCALE



RAMP ROAD TYPICAL SECTIONS

NO SCALE



Montana Fish
Wildlife & Parks

126

NOTES AND DETAILS
BEARMOUTH FISHING ACCESS SITE
FWP #7163607



28 ANTLER AVENUE
CLANCY, MT 59634
406-443-6111
jeff@larsonce.com

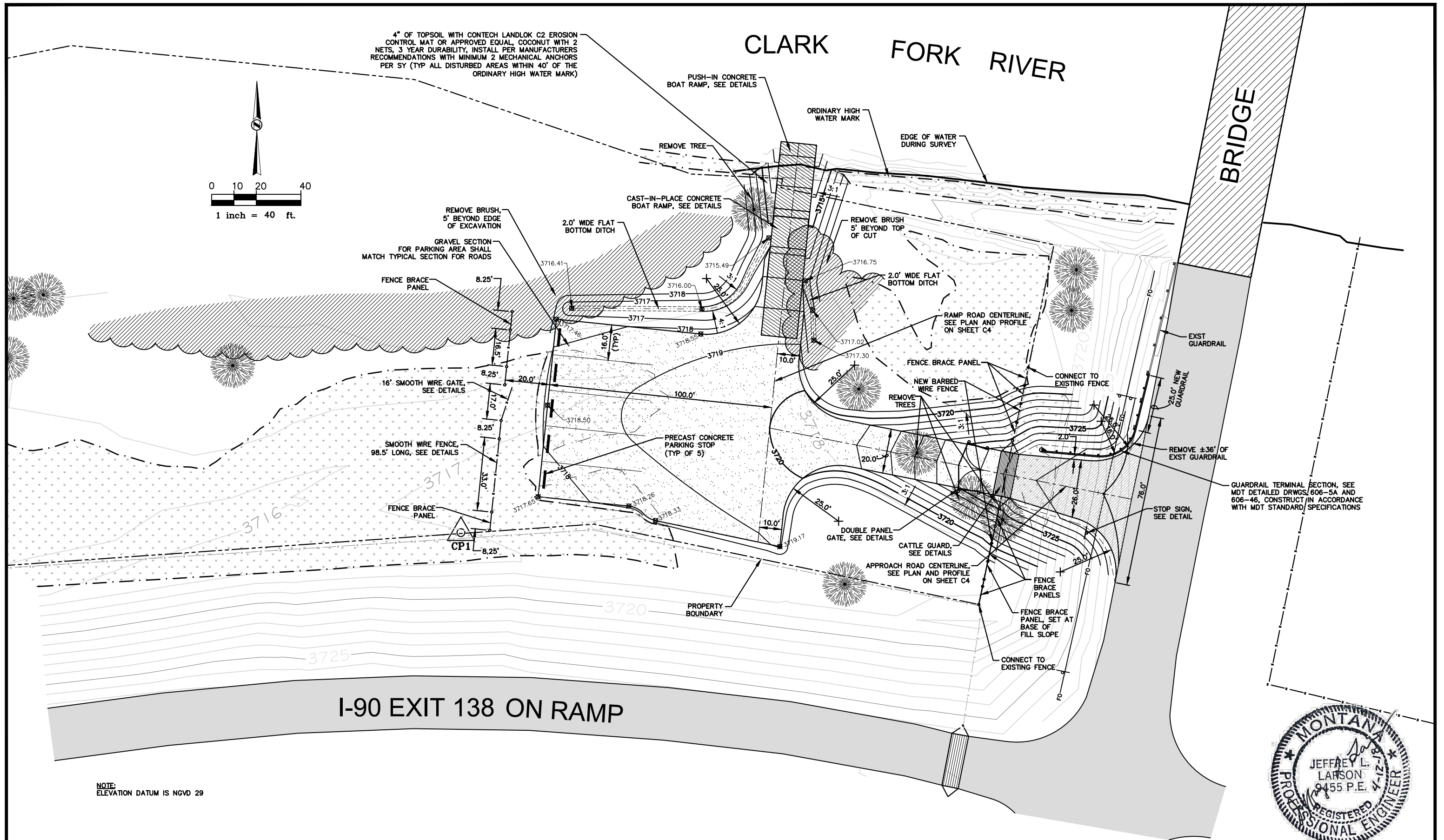
SHEET:

C1

J. LARSON	APRIL 12, 2018
DRAWN BY:	DATE:
J. LARSON	APRIL 12, 2018
CHECKED BY:	DATE:

REVISED BY:	DATE:
J. LARSON	APRIL 12, 2018
APPROVED BY:	DATE:

APPROVED BY:	DATE:
APPROVED BY:	DATE:



J. LARSON
DRAWN BY:
J. LARSON
CHECKED BY:

APRIL 12, 2018
DATE:
APRIL 12, 2018
DATE:

REVISED BY: DATE:
J. LARSON APRIL 12, 2018
APPROVED BY: DATE:

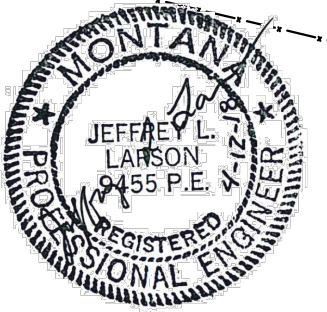
APPROVED BY: DATE:
APPROVED BY: DATE:



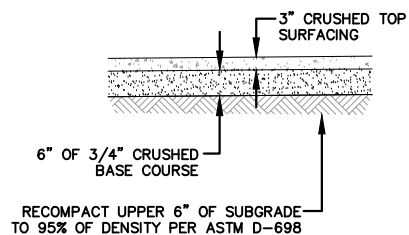
BOAT RAMP AREA SITE PLAN

BEARMOUTH FISHING ACCESS SITE
FWP #7163607

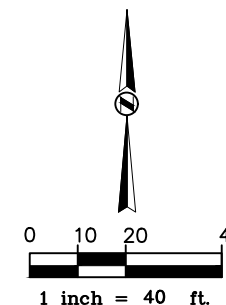
LARSON CIVIL
ENGINEERING, LLC
28 ANTLER AVENUE
CLANCY, MT 59634
406-443-6111
jeff@larsonce.com



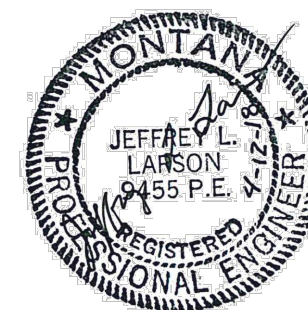
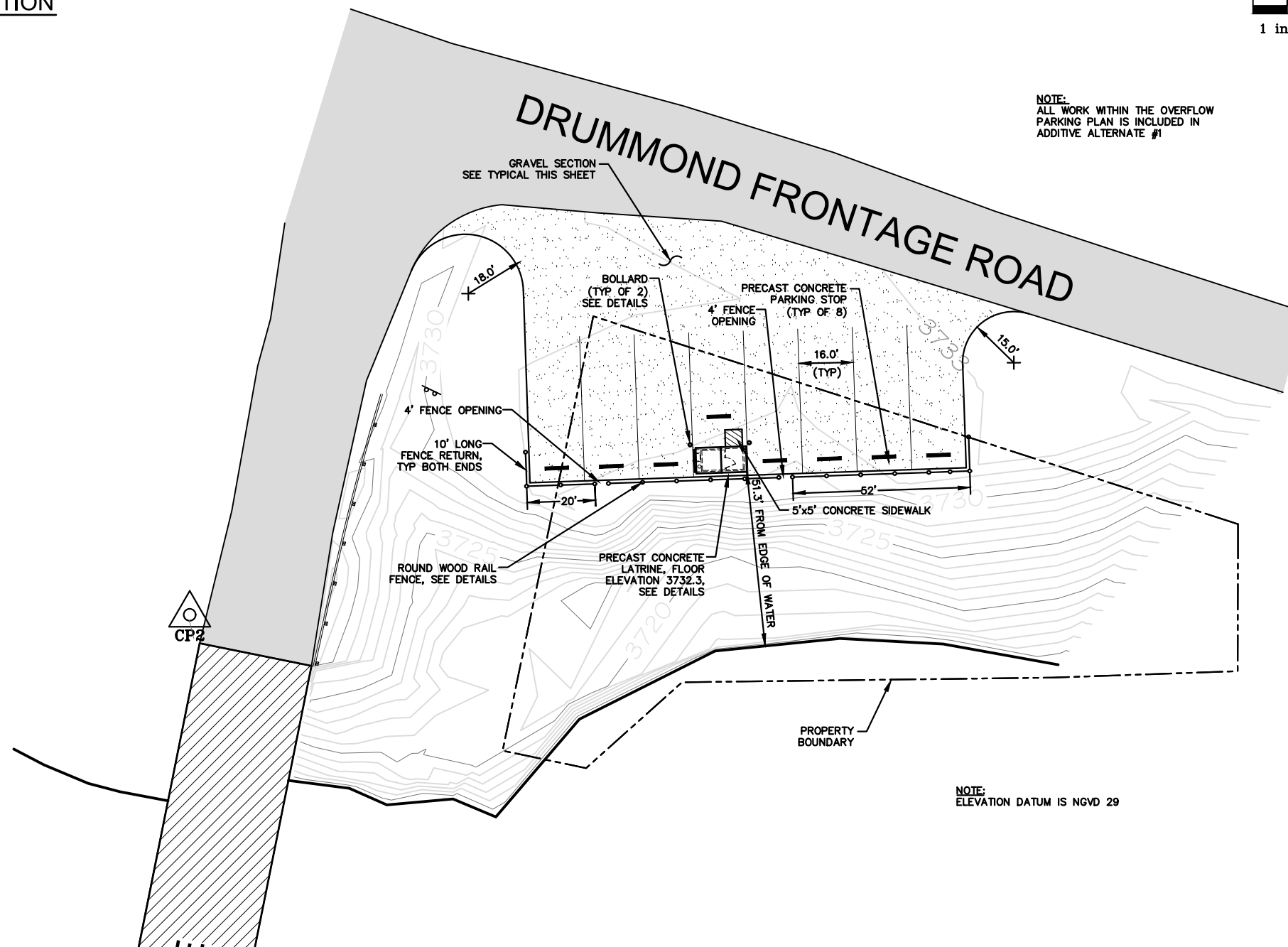
SHEET: **C2**



OVERFLOW PARKING AREA TYPICAL SECTION
NO SCALE



NOTE:
ALL WORK WITHIN THE OVERFLOW
PARKING PLAN IS INCLUDED IN
ADDITIVE ALTERNATE #1



J. LARSON	APRIL 12, 2018
DRAWN BY:	DATE:
J. LARSON	APRIL 12, 2018
CHECKED BY:	DATE:

REVISED BY:	DATE:
J. LARSON	APRIL 12, 2018
APPROVED BY:	DATE:

APPROVED BY:	DATE:
APPROVED BY:	DATE:



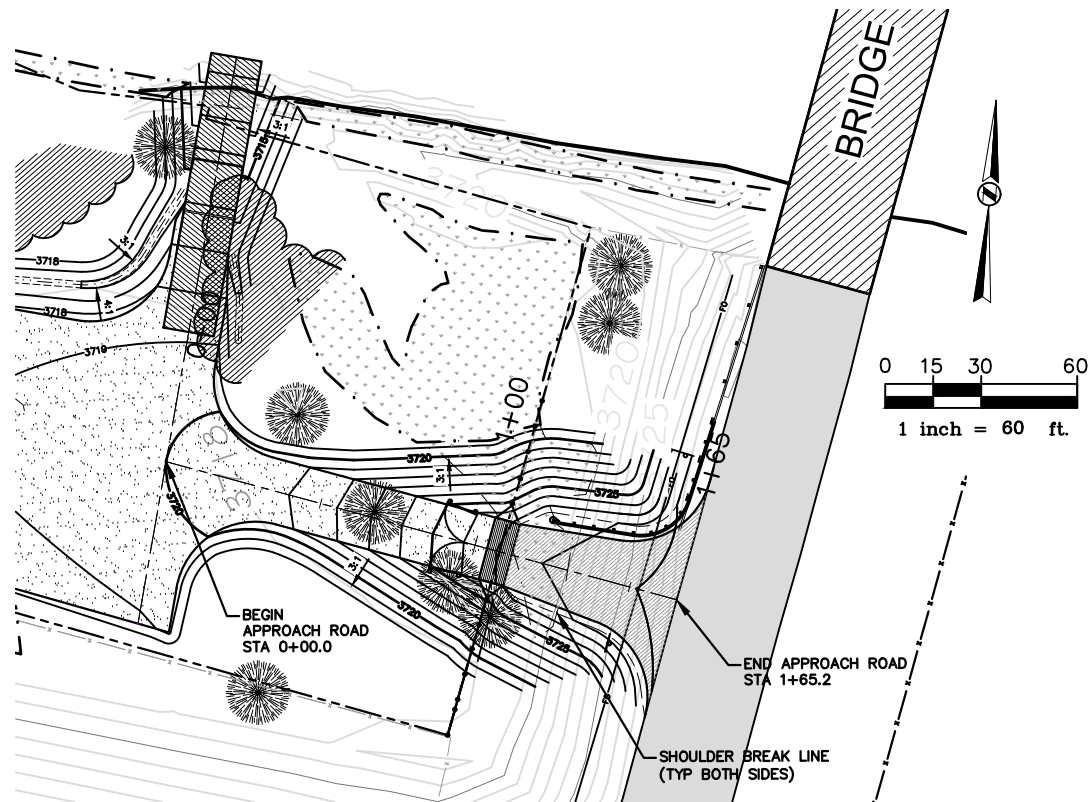
**Montana Fish,
Wildlife & Parks**

OVERFLOW PARKING SITE PLAN
BEARMOUTH FISHING ACCESS SITE
FWP #7163607

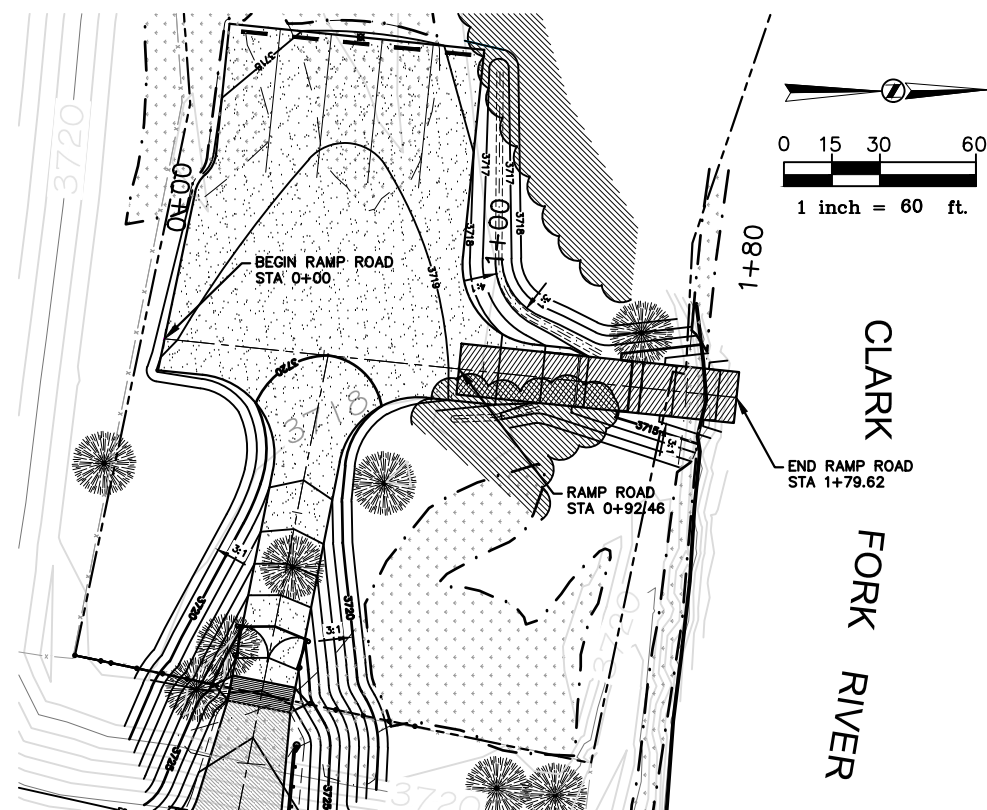
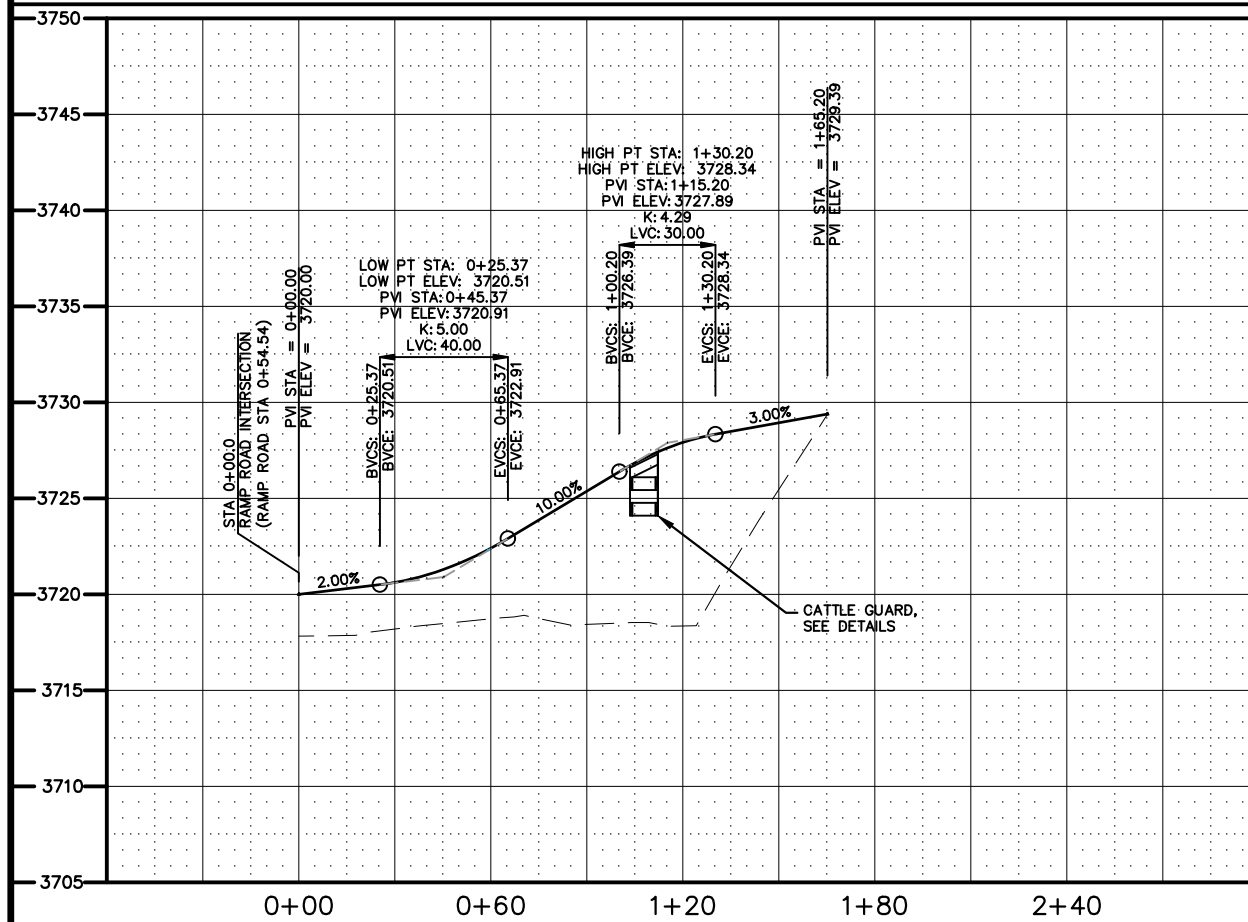


28 ANTLER AVENUE
CLANCY, MT 59634
406-443-6111
jeff@larsonce.com

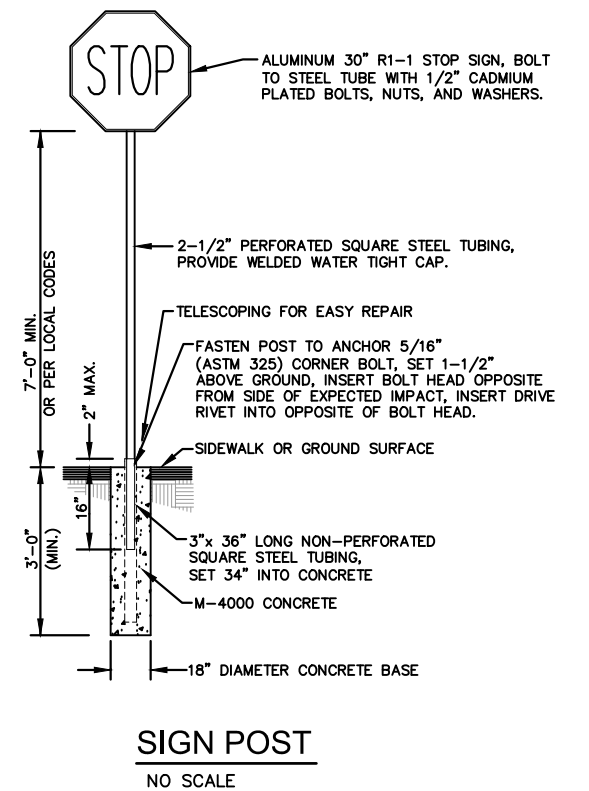
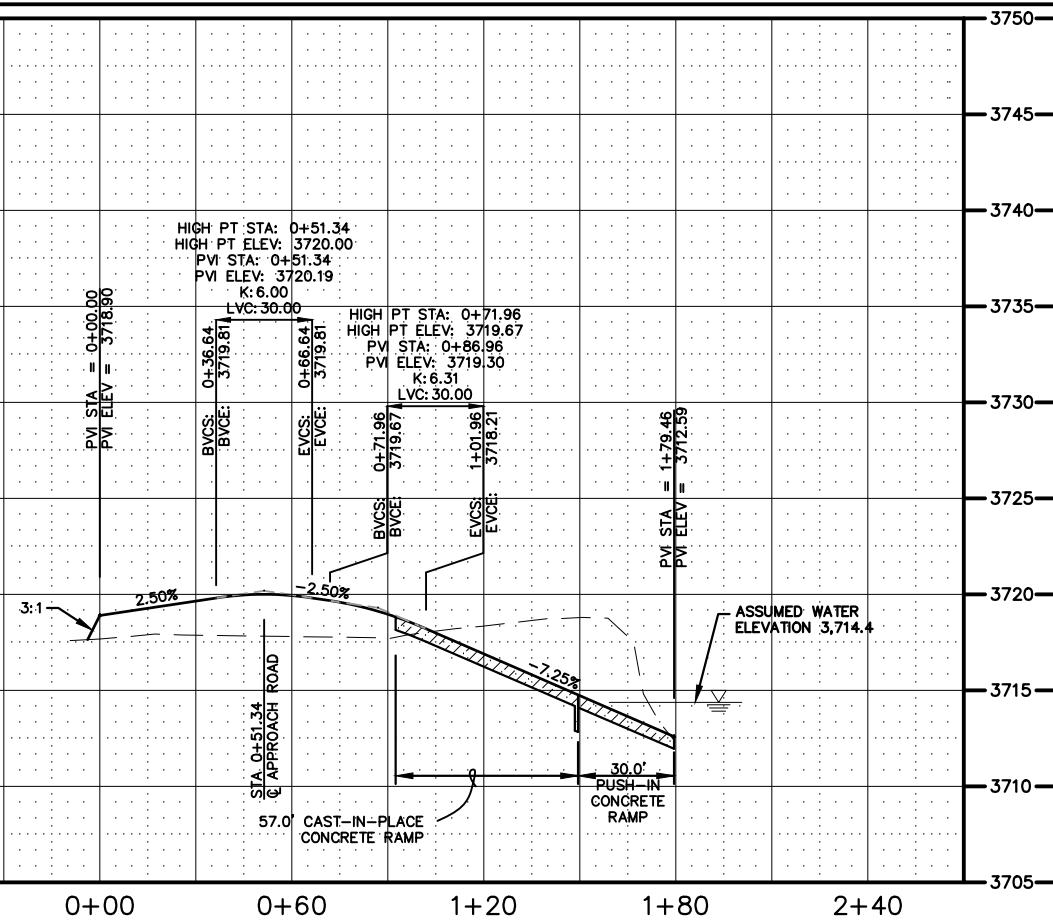
SHEET: **C3**



APPROACH ROAD PROFILE



RAMP ROAD PROFILE



J. LARSON
DRAWN BY: DATE: APRIL 12, 2018

J. LARSON
CHECKED BY: DATE: APRIL 12, 2018

REVISED BY: DATE:

J. LARSON
APPROVED BY: DATE: APRIL 12, 2018

APPROVED BY: DATE:

APPROVED BY: DATE:



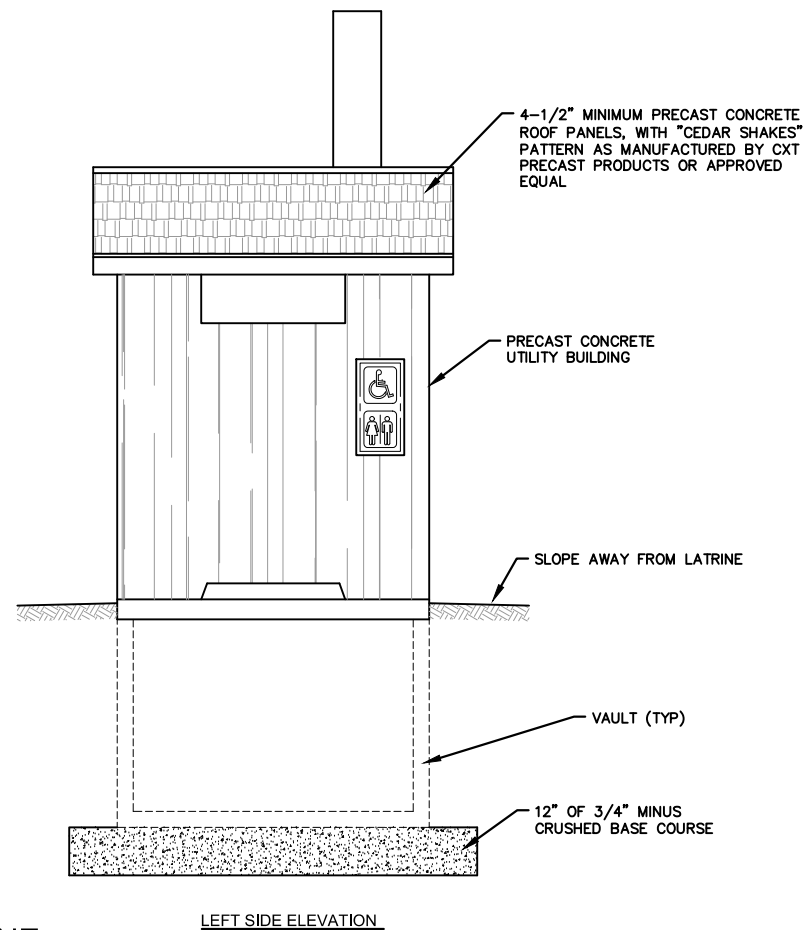
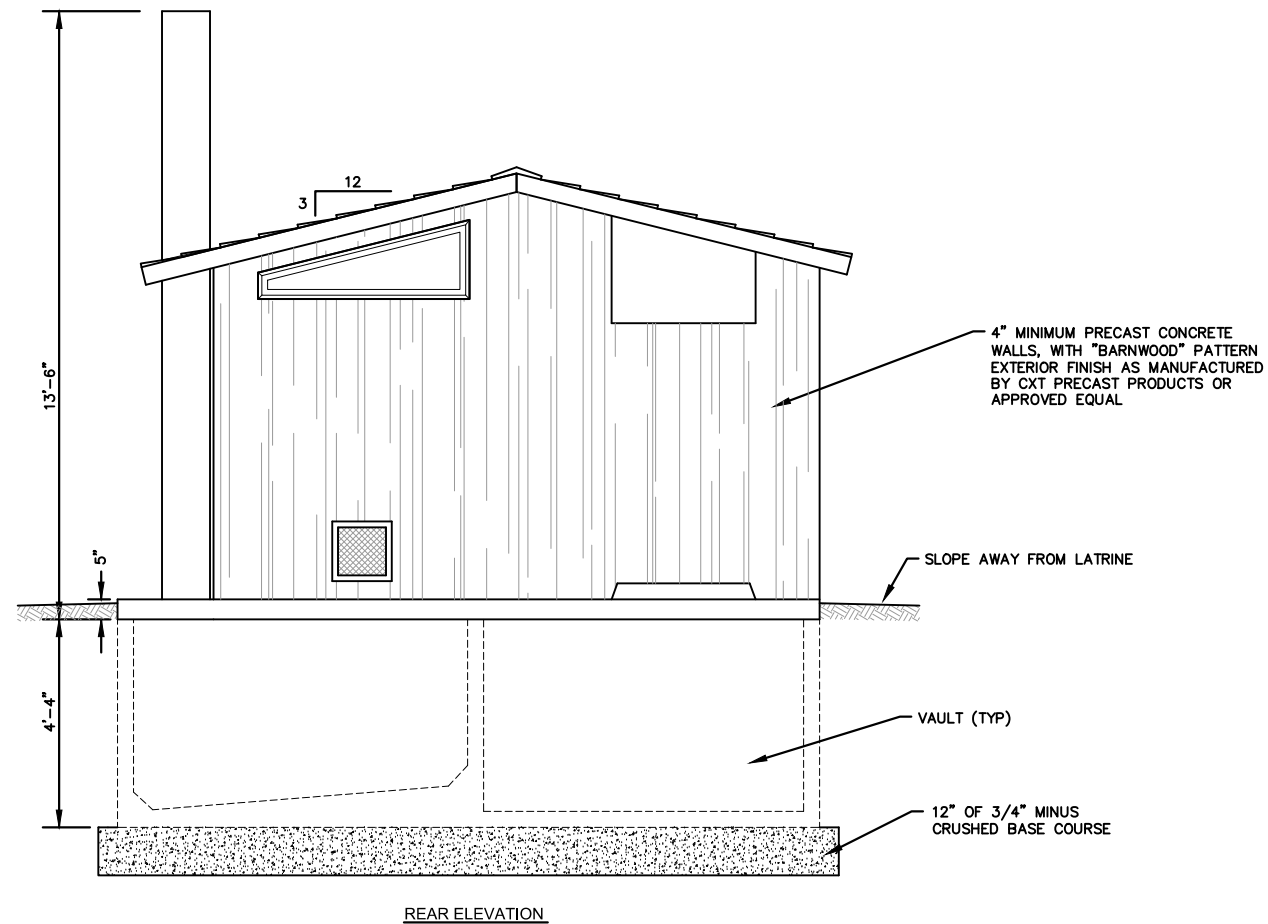
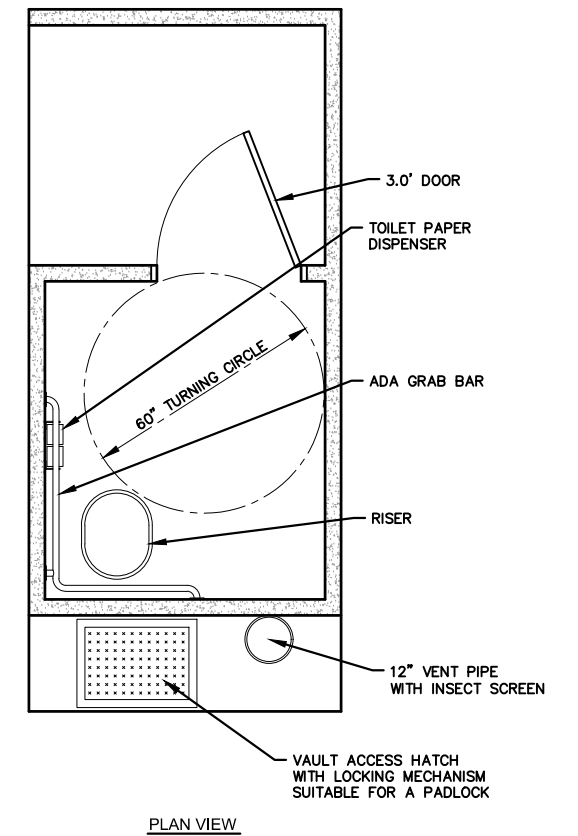
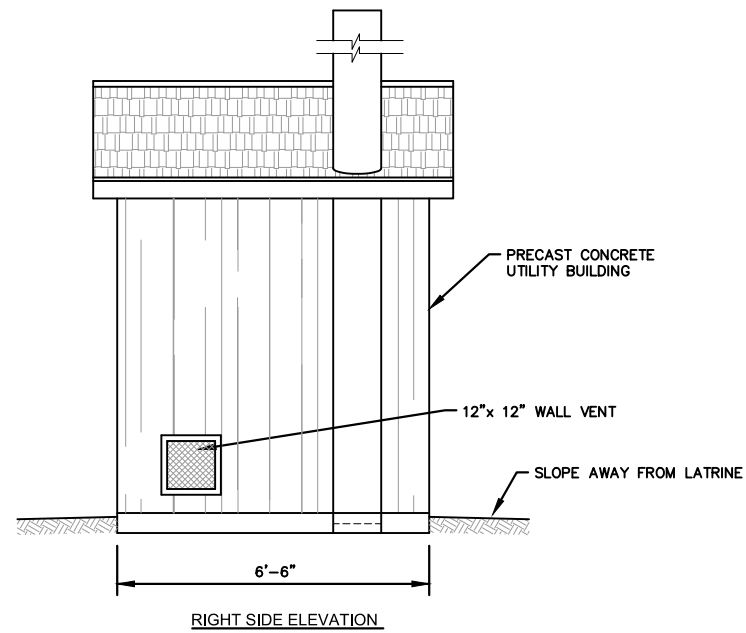
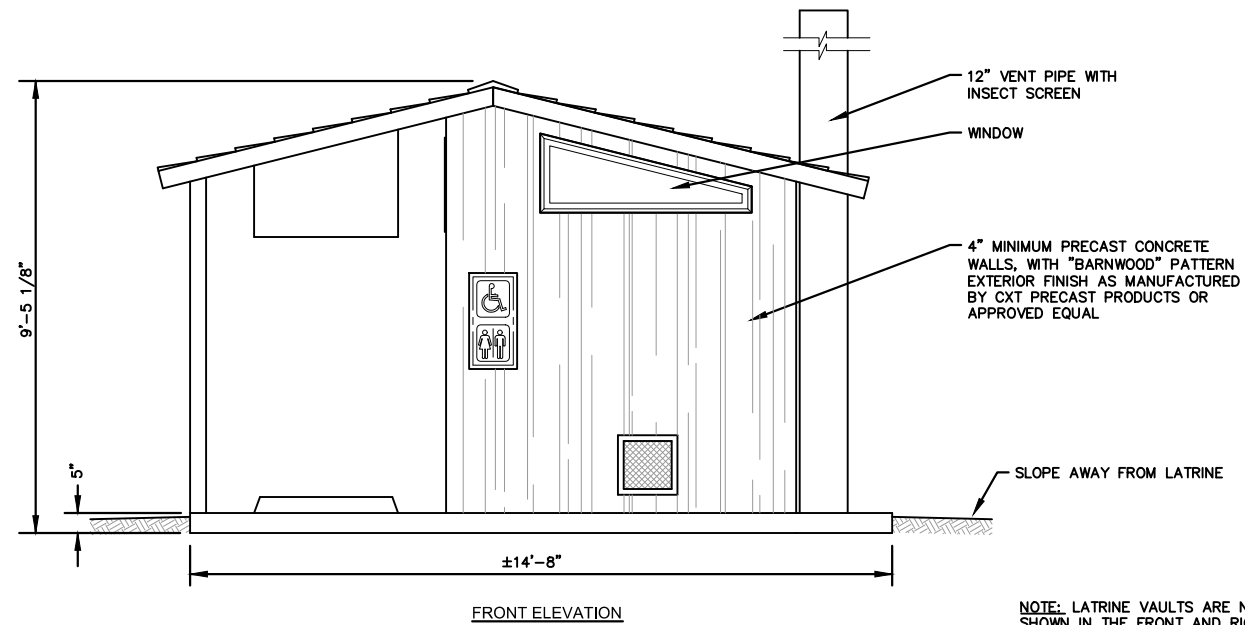
Montana Fish,
Wildlife & Parks

ROAD PLAN AND PROFILES
BEARMOUTH FISHING ACCESS SITE
FWP #7163607

LARSON
CIVIL
ENGINEERING, LLC

28 ANTLER AVENUE
CLANCY, MT 59634
406-443-6111
jeff@larsonce.com

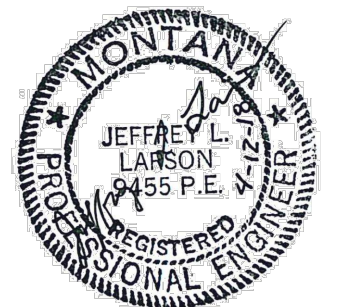
SHEET: C4



PRECAST CONCRETE LATRINE
NO SCALE

NOTES:

1. SHALL BE CONSTRUCTED WITH A MINIMUM FLOOR THICKNESS OF 5", A MINIMUM WALL THICKNESS OF 4", AND A MINIMUM ROOF PANEL THICKNESS OF 4-1/2".
2. THE LATRINE IS INCLUDED IN ADDITIVE ALTERNATE #1.
3. THE LATRINE SHALL BE PROVIDED BY FWP AT NO COST TO THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF THE LATRINE. SEE THE TECHNICAL SPECIFICATIONS.



J. LARSON
DRAWN BY:
J. LARSON
CHECKED BY:

APRIL 12, 2018
DATE:
APRIL 12, 2018
DATE:

REVISED BY: DATE:
J. LARSON APRIL 12, 2018
APPROVED BY: DATE:

APPROVED BY: DATE:
APPROVED BY: DATE:



**Montana Fish,
Wildlife & Parks**

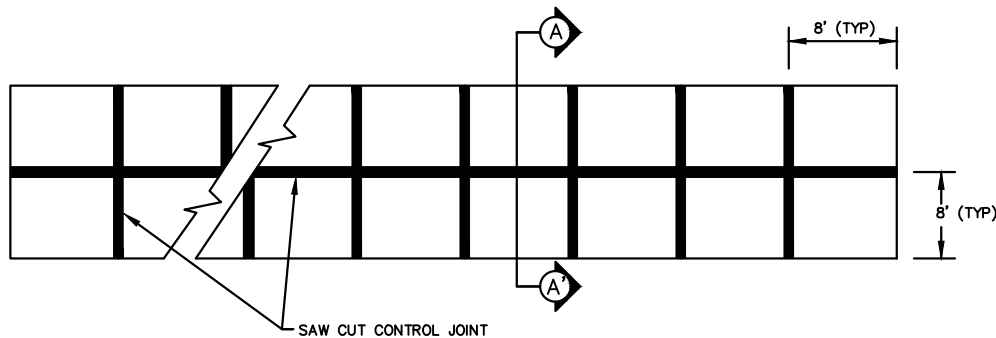
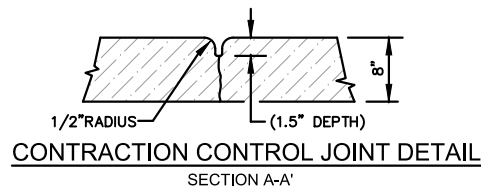
130

LATRINE DETAILS
BEARMOUTH FISHING ACCESS SITE
FWP #7163607



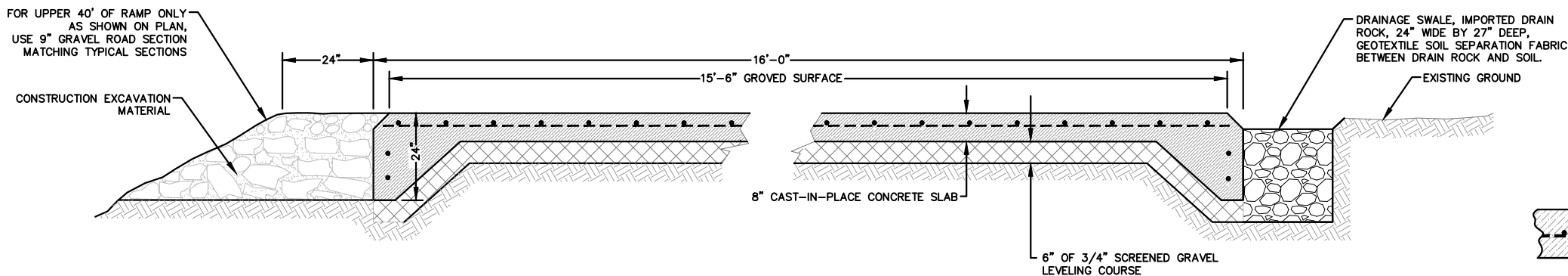
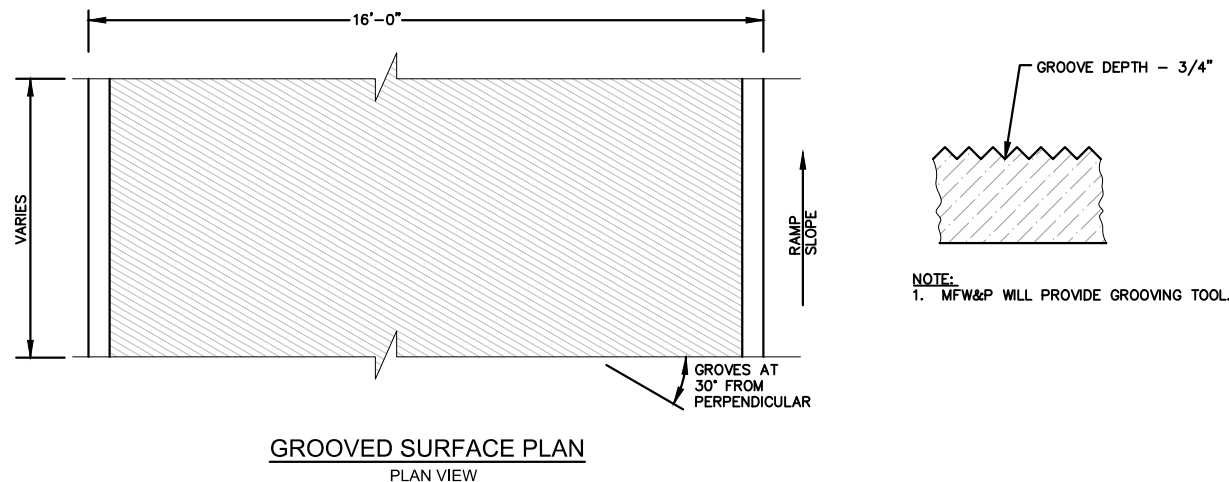
28 ANTLER AVENUE
CLANCY, MT 59634
406-443-6111
jeff@larsonce.com

SHEET: **C5**



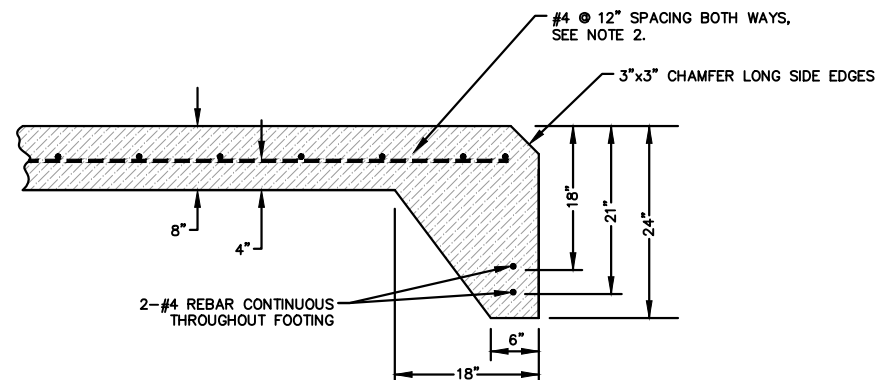
- NOTES:
1. CONCRETE FOR NEW RAMP IS A 3/4" MINUS; 6-1/2 SACK MIX WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI, REINFORCED WITH #4 BARS @ 12" SPACING BOTH DIRECTIONS.
 2. SCREED CONCRETE FOLLOWED BY GROOVING THE SURFACE.
 3. SAW CUT CONTRACTION JOINTS AFTER THE RAMP IS GROOVED.

SLAB CONTROL JOINT DETAIL
PLAN VIEW



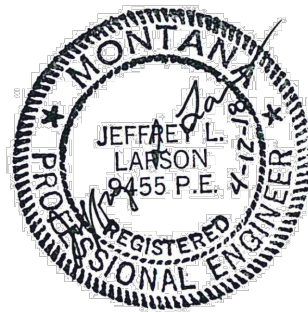
TO BE USED WHEN:
SURFACE OF RAMP IS ABOVE EXISTING
GROUND TO PROTECT AGAINST EROSION
OR IN AREAS WHERE GRAVEL SURFACING
IS SHOWN ADJACENT TO RAMP

SECTION A-A'



- NOTES:
1. CONTINUE THICKENED EDGE FOOTING AROUND ENTIRE PERIMETER OF CAST-IN-PLACE CONCRETE.
 2. EXTEND AND EXPOXY #4 BARS MIN 20" (12" O.C.) IN EXISTING CONCRETE CONNECTIONS. PROVIDE EXPANSION JOINT MATERIAL ALONG COLD JOINT CONNECTIONS.
 3. NO CHAMFER ALONG SIDEWALK/BULKHEAD/EXISTING CONCRETE CONNECTIONS.
 4. PROVIDE 3" CLEAR FOR ALL REBAR REINFORCEMENT FROM CONCRETE SURFACES IN CONTACT WITH EARTH. PROVIDE 2" CLEAR FROM ALL OTHER CONCRETE SURFACES.

CAST-IN-PLACE CONCRETE BOAT RAMP
NO SCALE



J. LARSON APRIL 12, 2018
DRAWN BY: DATE:
J. LARSON APRIL 12, 2018
CHECKED BY: DATE:

REVISED BY: DATE:
J. LARSON APRIL 12, 2018
APPROVED BY: DATE:

APPROVED BY: DATE:
APPROVED BY: DATE:



Montana Fish,
Wildlife & Parks

131

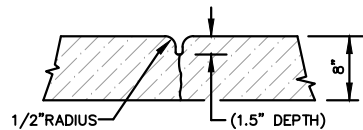
CAST-IN-PLACE BOAT RAMP
BEARMOUTH FISHING ACCESS SITE
FWP #7163607



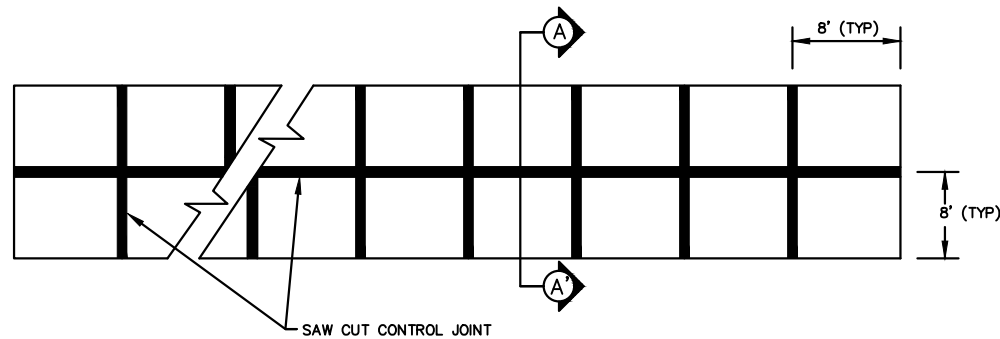
28 ANTLER AVENUE
CLANCY, MT 59634
406-443-6111
jeff@larsonce.com

SHEET: C6

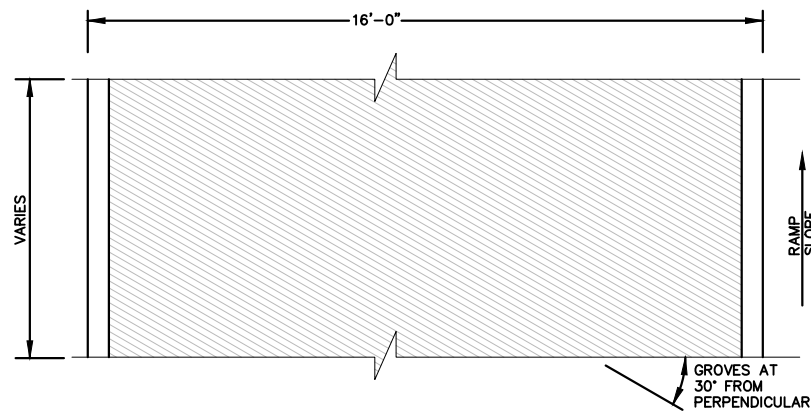
- NOTES:
1. CONCRETE FOR NEW RAMP SHALL BE M-4000 CONCRETE AS SPECIFIED BY THE MONTANA PUBLIC WORKS SPECIFICATION.
 2. SCREED CONCRETE FOLLOWED BY GROOVING THE SURFACE.
 3. SAW CUT CONTRACTION JOINTS AFTER THE RAMP IS GROOVED.



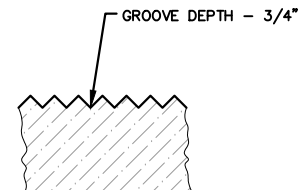
CONTRACTION CONTROL JOINT DETAIL
SECTION A-A'



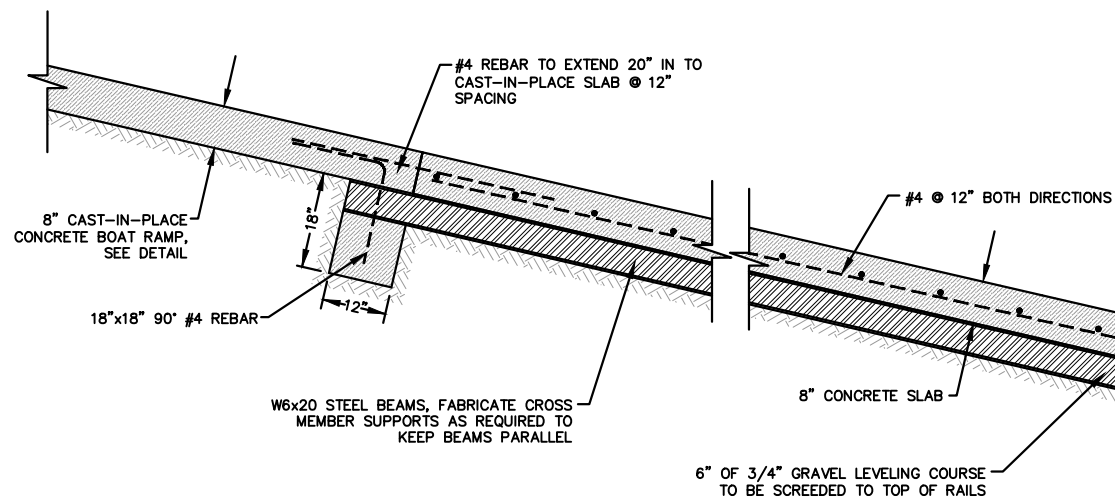
SLAB CONTROL JOINT DETAIL
PLAN VIEW



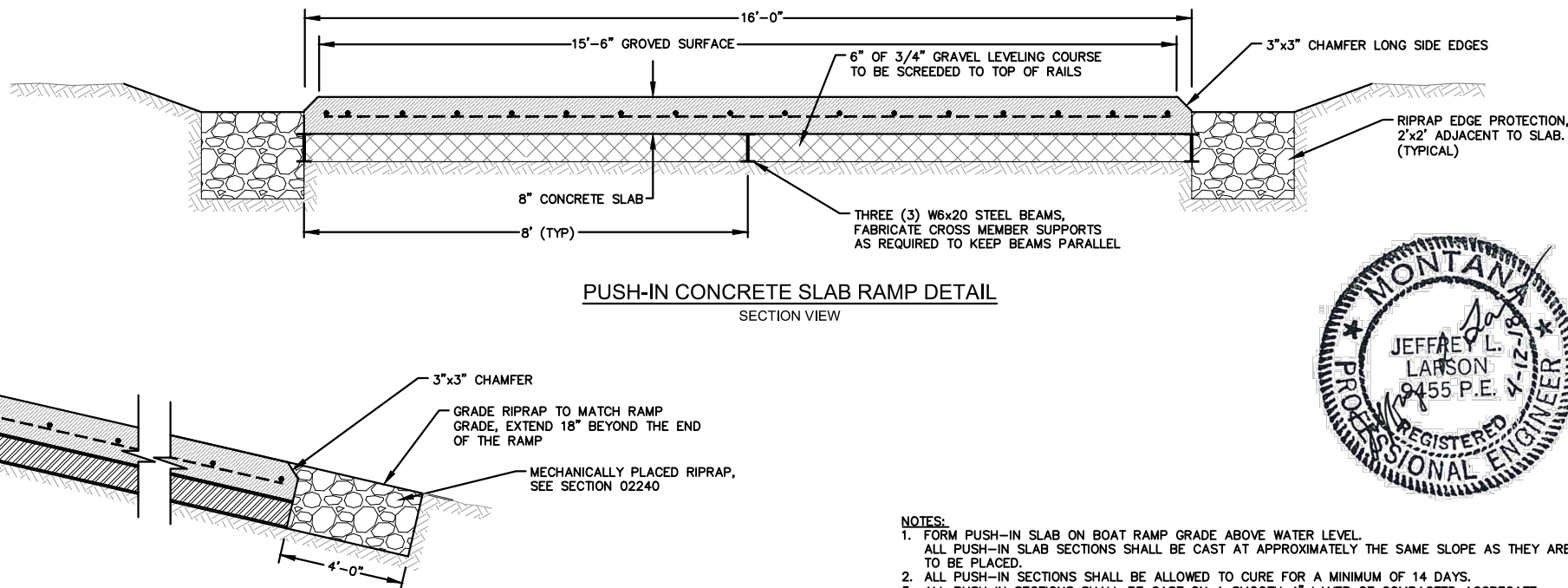
GROOVED SURFACE PLAN
PLAN VIEW



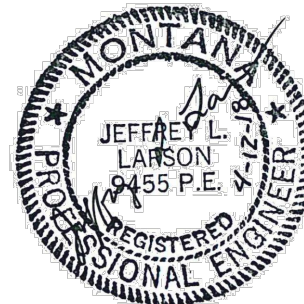
NOTE:
1. MFW&P WILL PROVIDE GROOVING TOOL.



PUSH-IN CONCRETE SLAB RAMP DETAIL
ELEVATION VIEW



PUSH-IN CONCRETE SLAB RAMP DETAIL
SECTION VIEW



- NOTES:
1. FORM PUSH-IN SLAB ON BOAT RAMP GRADE ABOVE WATER LEVEL.
 2. ALL PUSH-IN SLAB SECTIONS SHALL BE CAST AT APPROXIMATELY THE SAME SLOPE AS THEY ARE TO BE PLACED.
 3. ALL PUSH-IN SECTIONS SHALL BE ALLOWED TO CURE FOR A MINIMUM OF 14 DAYS.
 4. ALL PUSH IN SECTIONS SHALL BE CAST ON A SMOOTH 4" LAYER OF COMPACTED AGGREGATE.
 5. PLACE 2 LAYERS 4 MIL PLASTIC ON GRADE BEFORE PLACING CONCRETE TO PROVIDE SEPARATION BETWEEN WET CONCRETE AND SUBGRADE AND PROVIDE A SLIP PLANE WHEN MOVING THE SLAB INTO POSITION.
 6. DEPENDING ON CONSTRUCTION EQUIPMENT OR WORKING AREA LIMITATIONS, CONTRACTOR MAY HAVE TO MAKE MULTIPLE PUSH-IN SLAB POURS PRIOR TO FINAL INSTALLATION. ALL SEPARATE POURS WILL REQUIRE REBAR PLACEMENT AS DESCRIBED IN NOTE 6.
 7. REBAR SHALL BE EPOXIED OR CAST INTO THE FIRST SLAB AND EXTENDED A MINIMUM OF 20" INTO SUBSEQUENT SLAB(S).
 8. CONTRACTOR MAY ELECT TO FABRICATE ANGLE IRON ALONG EDGE OF OUTER STEEL SUPPORT BEAMS TO HELP DIRECT PUSH-IN SLAB DURING INSTALLATION.
 9. PROVIDE 3" CLEAR FOR ALL REBAR REINFORCEMENT FROM CONCRETE SURFACES IN CONTACT WITH EARTH. PROVIDE 2" CLEAR FROM ALL OTHER CONCRETE SURFACES.
 10. PLACE RIPRAP EDGE PROTECTION AT THE SAME GRADE OF PUSH-IN SLAB. KEY IN RIPRAP BY MECHANICAL TAMPING METHODS TO PROVIDE FLUSH SURFACE.
 11. THE ABOVE WATER CAST-IN PLACE SLAB SHALL BE CONSTRUCTED AFTER THE PUSH-IN SLAB IS MOVED INTO POSITION.
 12. A TURBIDITY CURTAIN SHALL BE INSTALLED PRIOR TO COMMENCING ANY EXCAVATION WORK IN THE RIVER AND SHALL BE MAINTAINED THROUGH THE PERFORMANCE OF ALL WORK WITHIN THE RIVER. SEE TECHNICAL SPECIFICATION 01/801, FLOATING TURBIDITY CURTAIN.

PUSH-IN CONCRETE BOAT RAMP
NO SCALE

J. LARSON APRIL 12, 2018
DRAWN BY: DATE:
J. LARSON APRIL 12, 2018
CHECKED BY: DATE:

REVISED BY: DATE:
J. LARSON APRIL 12, 2018
APPROVED BY: DATE:

APPROVED BY: DATE:
APPROVED BY: DATE:



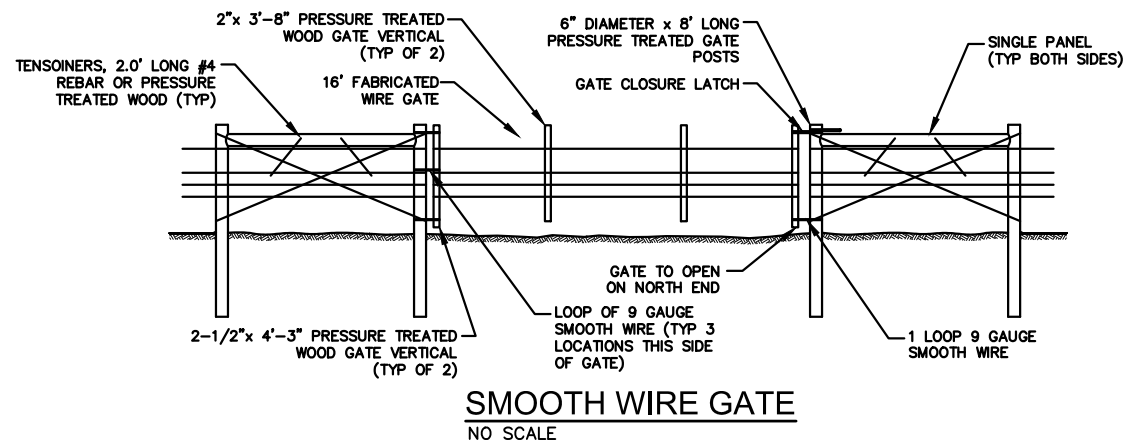
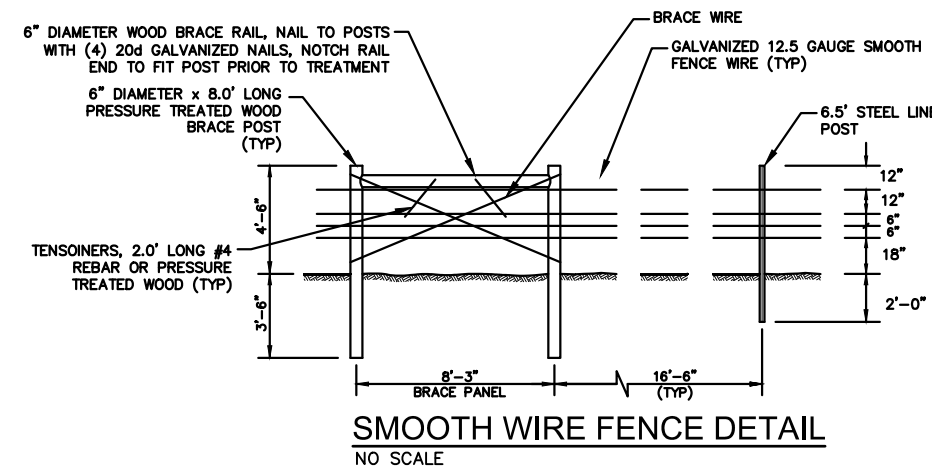
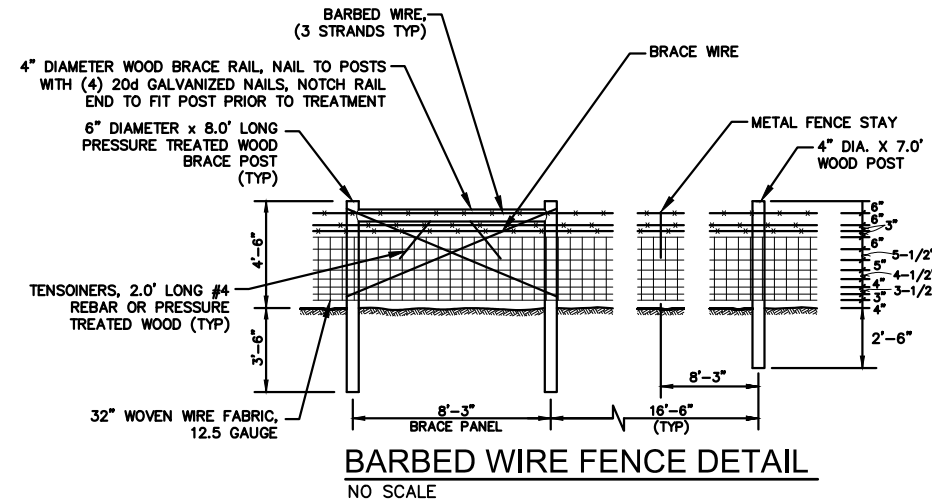
Montana Fish,
Wildlife & Parks
132

PUSH-IN BOAT RAMP DETAILS
BEARMOUTH FISHING ACCESS SITE
FWP #7163607

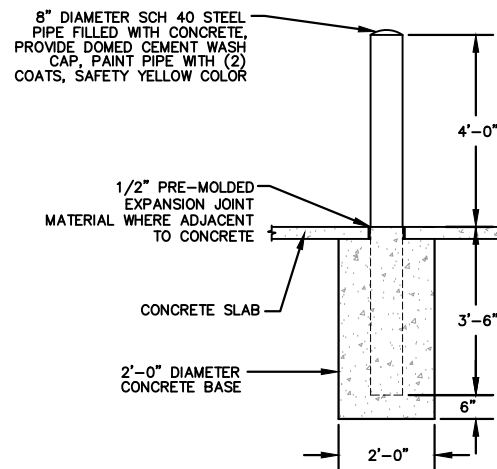


28 ANTLER AVENUE
CLANCY, MT 59634
406-443-6111
jeff@larsonce.com

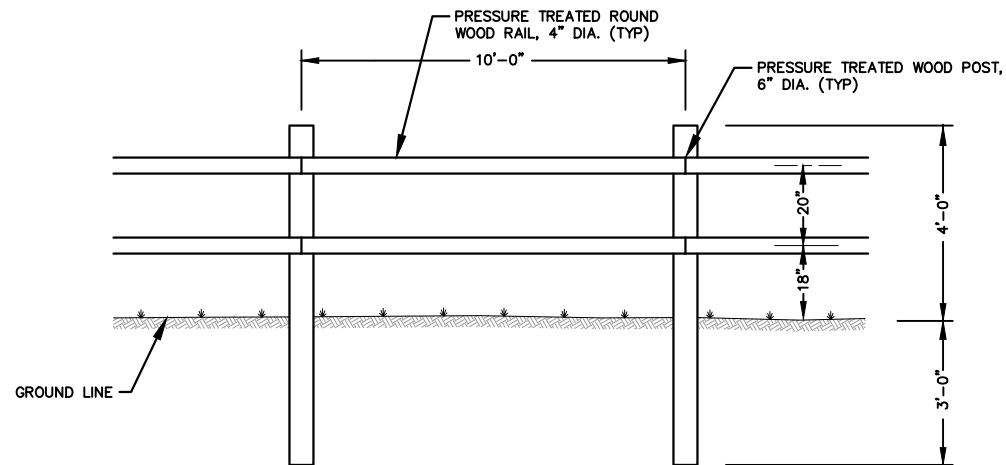
SHEET: C7



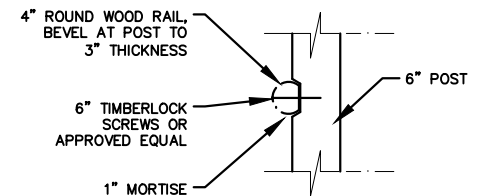
NOTE:
BOLLARDS ARE INCLUDED
IN ADDITIVE ALTERNATE #1



PIPE BOLLARD DETAIL
NO SCALE



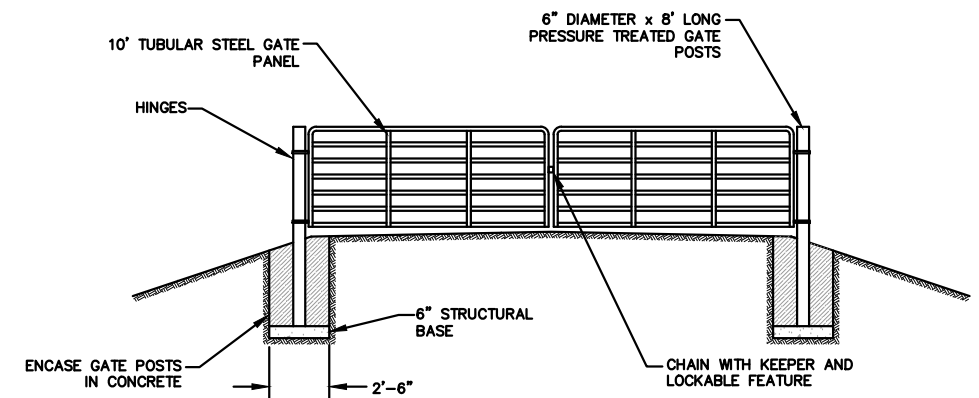
ELEVATION



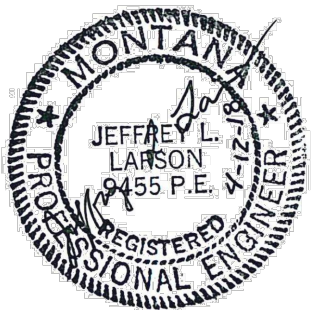
SECTION

ROUND WOOD RAIL FENCE DETAIL

NOTE:
INSTALL (2) 6\"/>



DOUBLE PANEL METAL GATE
NO SCALE



J. LARSON APRIL 12, 2018
DRAWN BY: DATE:
J. LARSON APRIL 12, 2018
CHECKED BY: DATE:

REVISED BY: DATE:
J. LARSON APRIL 12, 2018
APPROVED BY: DATE:

APPROVED BY: DATE:
APPROVED BY: DATE:



**Montana Fish
Wildlife & Parks**

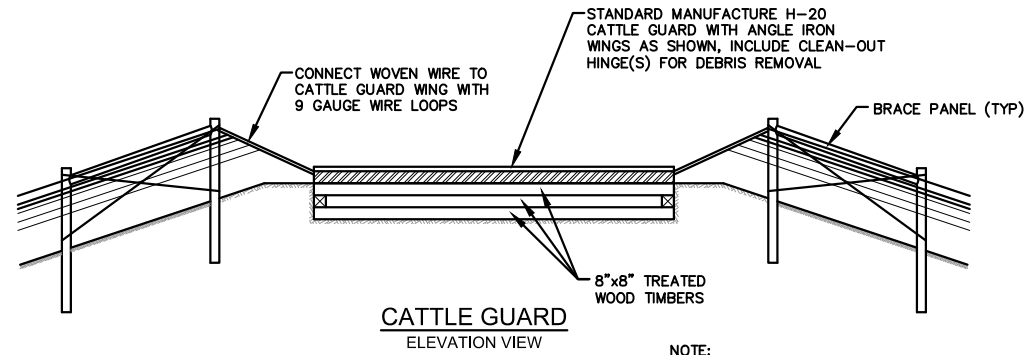
133

BARRIER DETAILS
BEARMOUTH FISHING ACCESS SITE
FWP #7163607

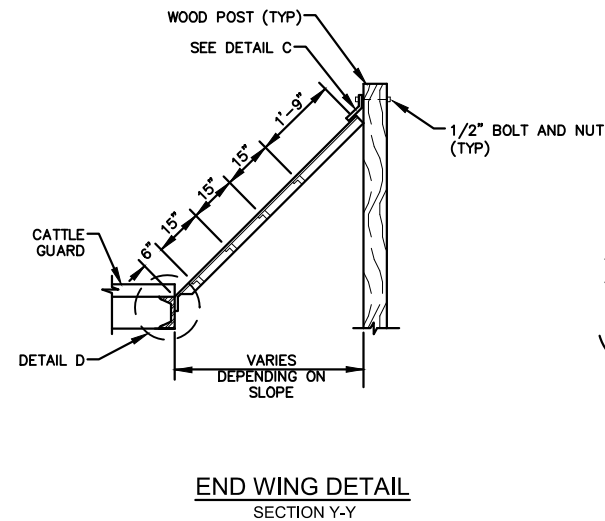
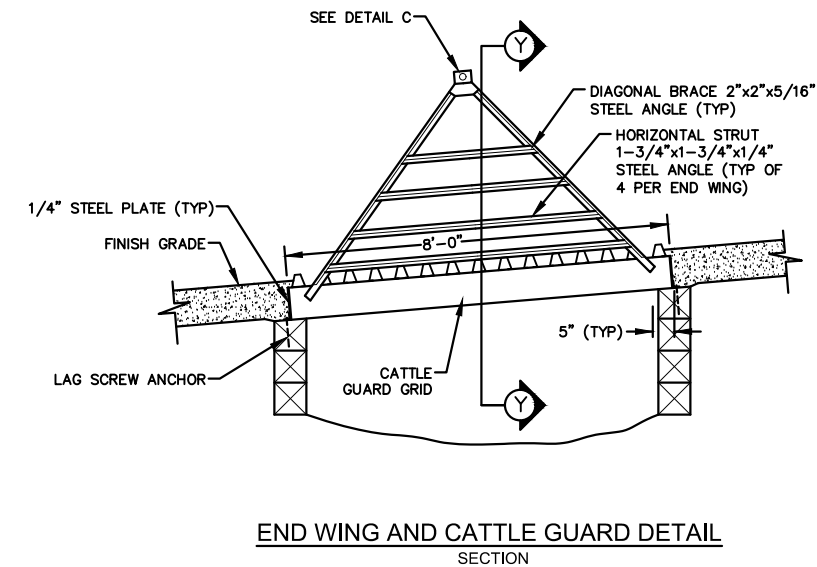
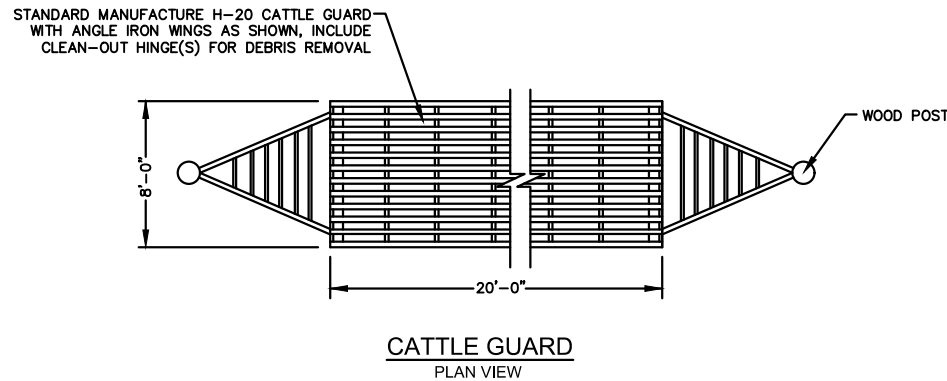


28 ANTLER AVENUE
CLANCY, MT 59634
406-443-6111
jeff@larsonce.com

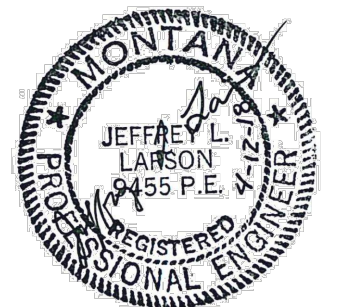
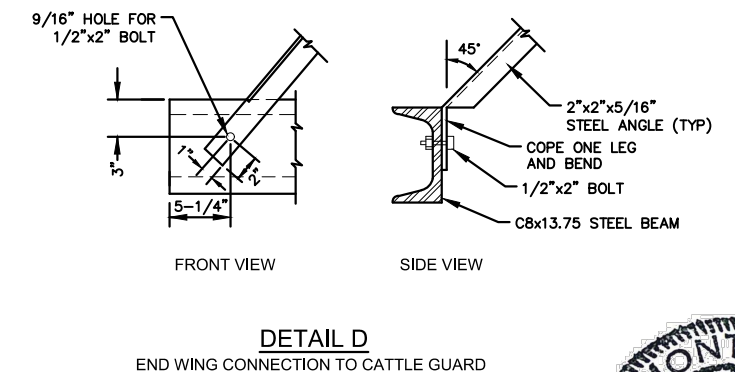
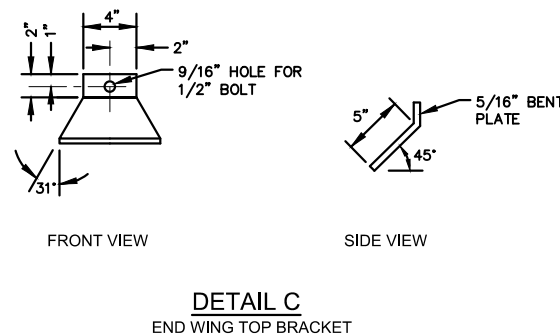
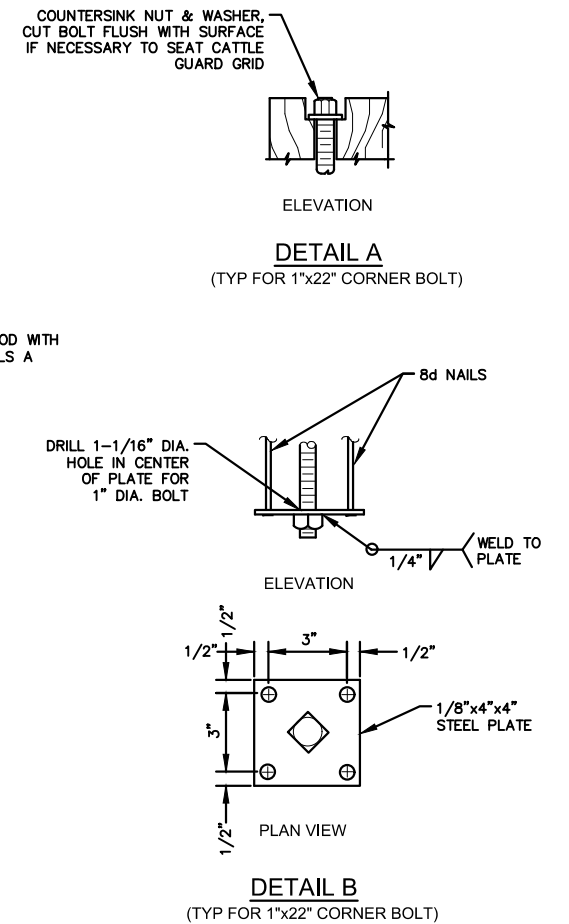
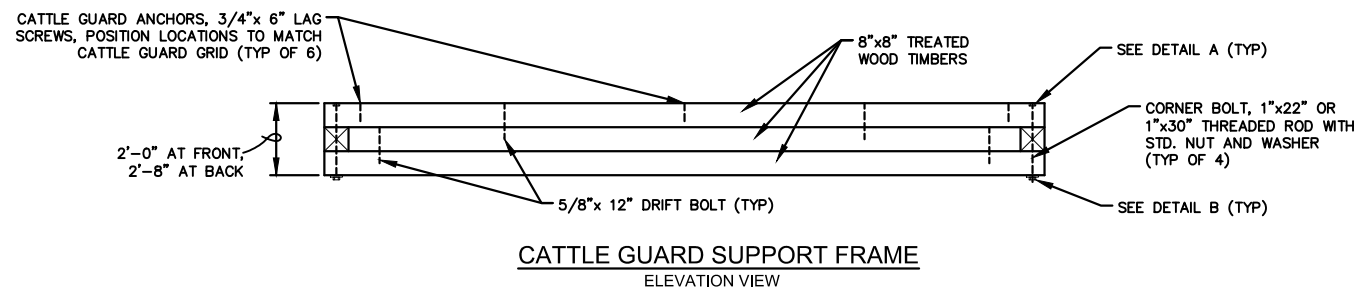
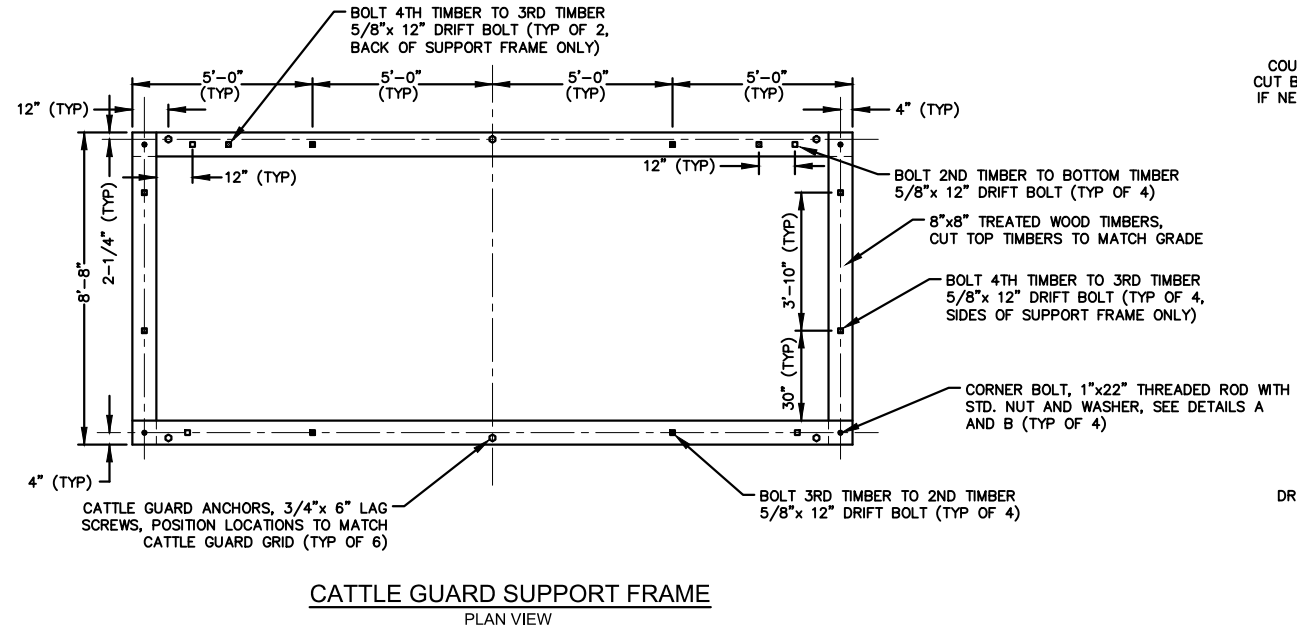
SHEET: C8



NOTE:
REMOVE EXISTING FENCE AS REQUIRED AND
CONNECT CATTLE GUARD TO EXISTING FENCE
AS SHOWN IN SITE PLAN.



CATTLE GUARD
NO SCALE



J. LARSON	APRIL 12, 2018	REVISED BY:	DATE:	APPROVED BY:	DATE:
DRAWN BY:	DATE:	J. LARSON	APRIL 12, 2018		
J. LARSON	APRIL 12, 2018	APPROVED BY:	DATE:	APPROVED BY:	DATE:
CHECKED BY:	DATE:				



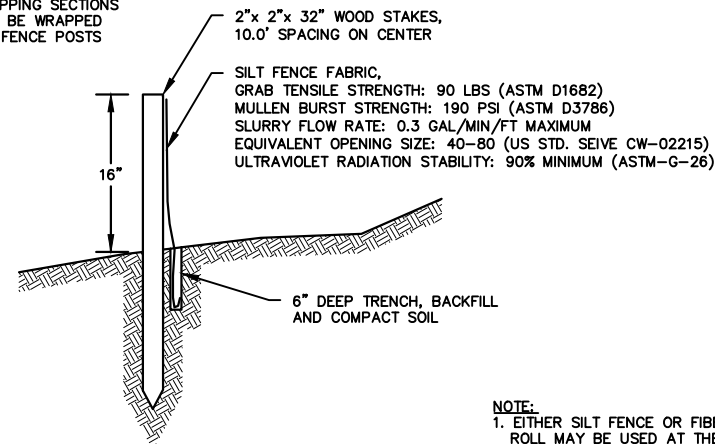
CATTLE GUARD DETAILS

BEARMOUTH FISHING ACCESS SITE
FWP #7163607

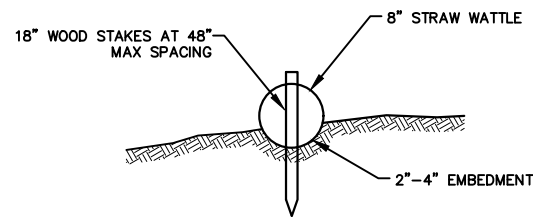
LARSON CIVIL
ENGINEERING, LLC
28 ANTLER AVENUE
CLANCY, MT 59634
406-443-6111
jeff@larsonce.com

SHEET: **C9**

NOTE:
1. ENDS OF OVERLAPPING SECTIONS OF FABRIC SHALL BE WRAPPED AROUND SHARED FENCE POSTS UNTIL SECURE.



SILT FENCE

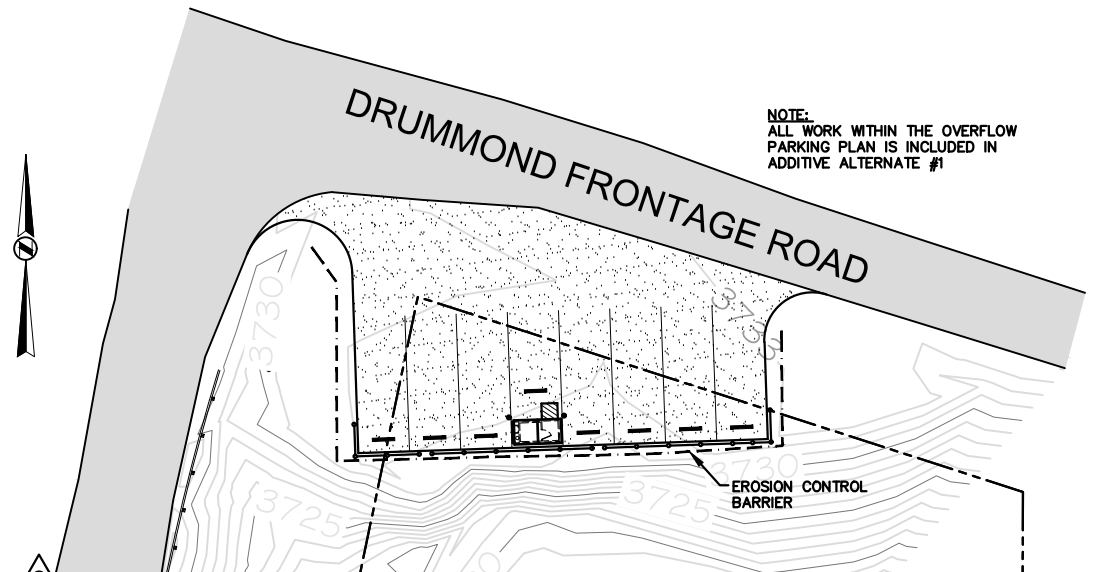


FIBER ROLL

NOTE:
1. EITHER SILT FENCE OR FIBER ROLL MAY BE USED AT THE CONTRACTOR'S OPTION.

EROSION CONTROL BARRIER DETAILS

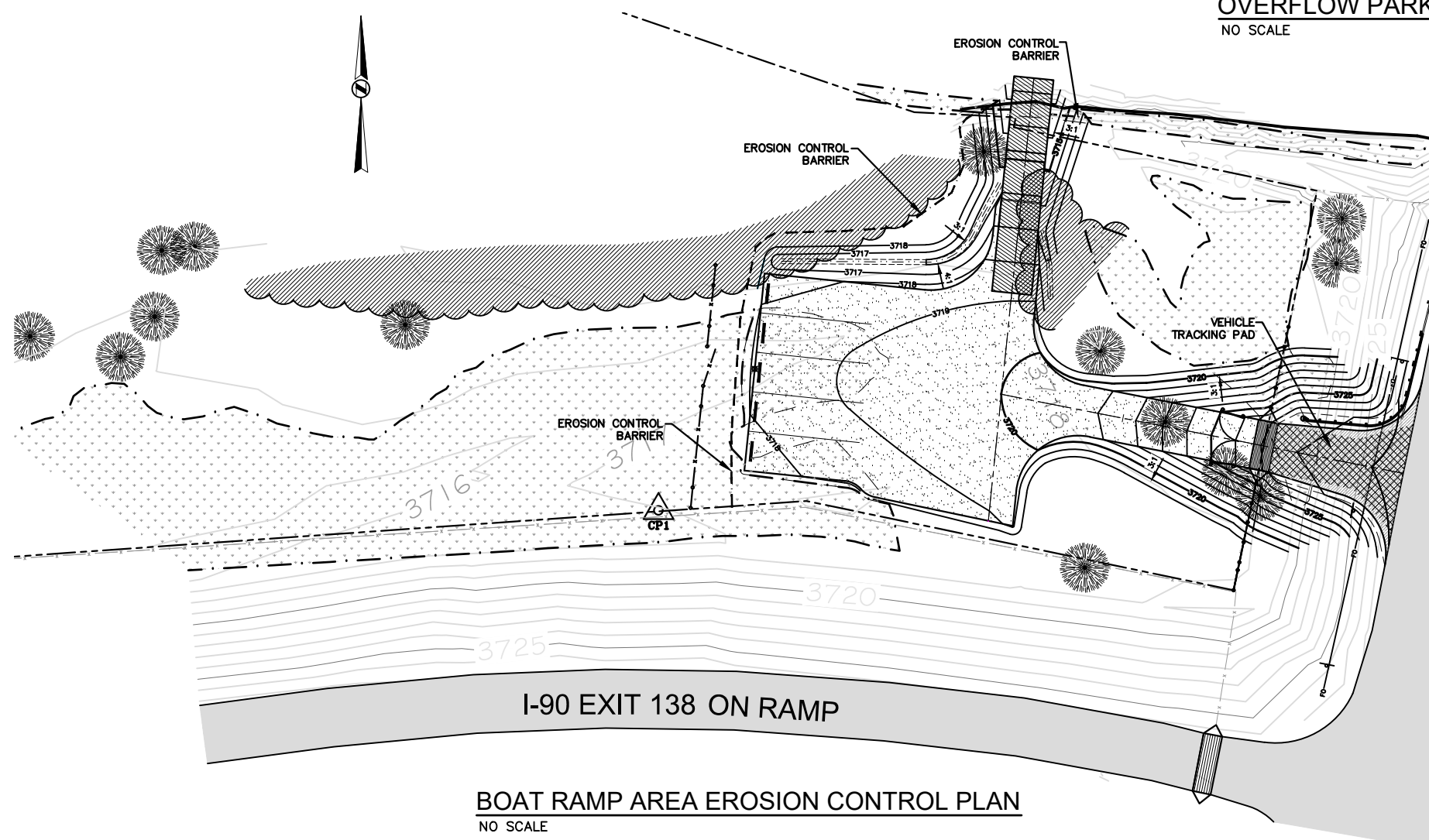
NO SCALE



NOTE:
ALL WORK WITHIN THE OVERFLOW PARKING PLAN IS INCLUDED IN ADDITIVE ALTERNATE #1

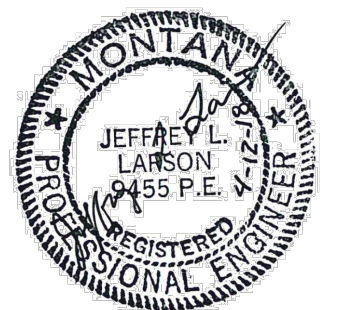
OVERFLOW PARKING AREA EROSION CONTROL PLAN

NO SCALE



BOAT RAMP AREA EROSION CONTROL PLAN

NO SCALE



J. LARSON APRIL 12, 2018
DRAWN BY: DATE:
J. LARSON APRIL 12, 2018
CHECKED BY: DATE:

REVISED BY: DATE:
J. LARSON APRIL 12, 2018
APPROVED BY: DATE:

APPROVED BY: DATE:
APPROVED BY: DATE:



**Montana Fish,
Wildlife & Parks**
135

EROSION CONTROL DETAILS
BEARMOUTH FISHING ACCESS SITE
FWP #7163607



28 ANTLER AVENUE
CLANCY, MT 59634
406-443-6111
jeff@larsonce.com

SHEET: C10